Image Super Resolution

Minju Kim

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Super Resolution

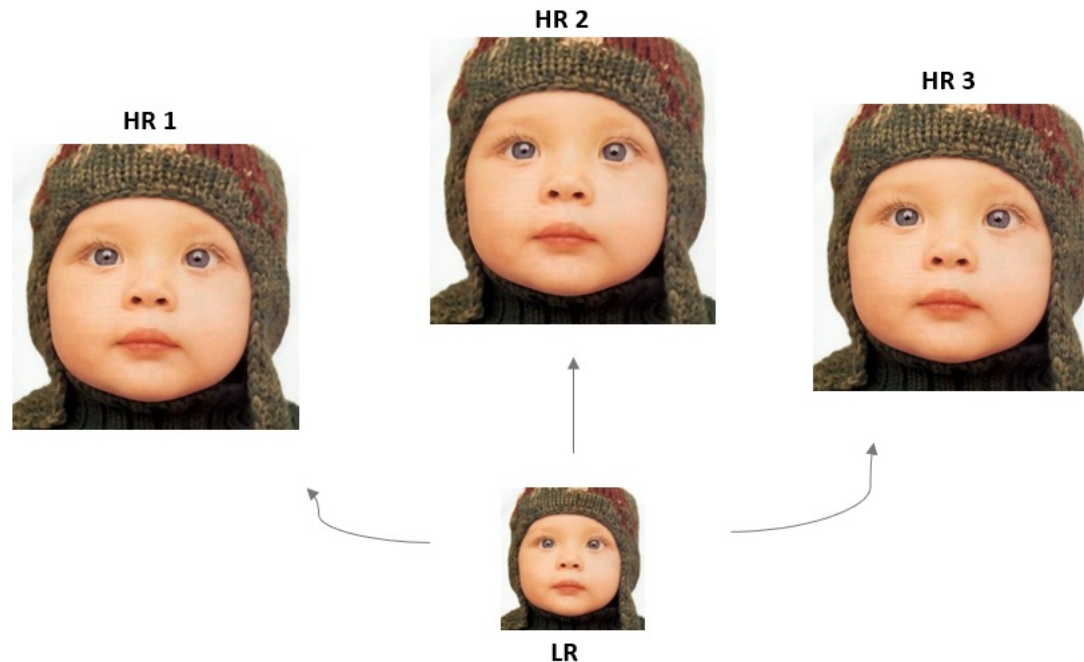화질구지 → 딥러닝 → 고해상도
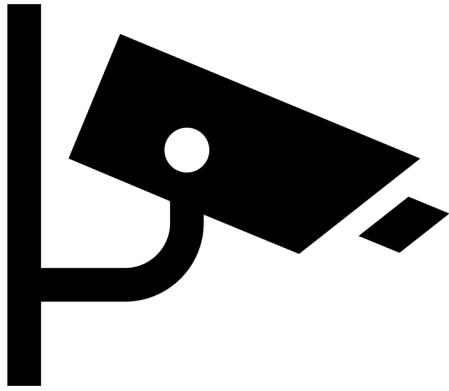
What is Image Super Resolution?

"**Image super-resolution (SR)** is the process of recovering **high-resolution (HR)** images from **low-resolution (LR)** images."
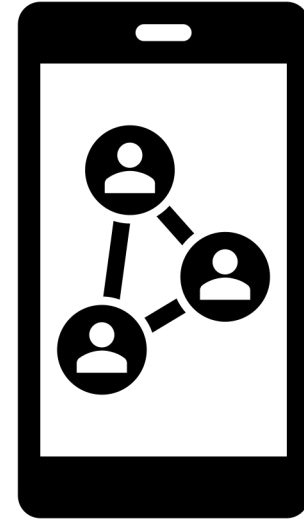
Where can ISR be applied?

1. Surveillance

2. Medical

3. Media

Upscaling Images
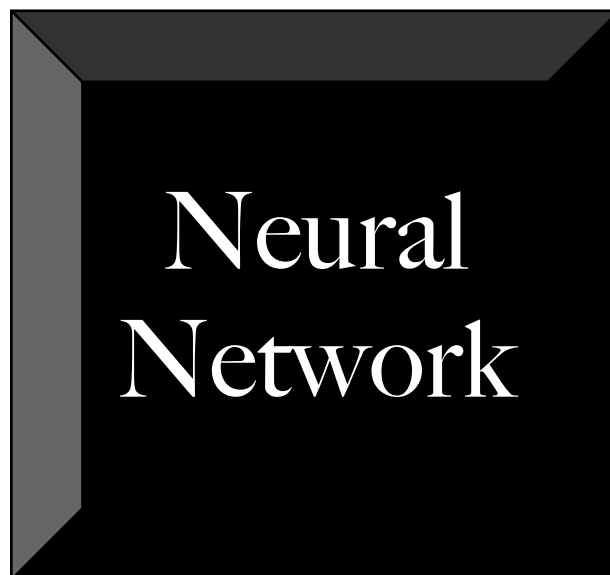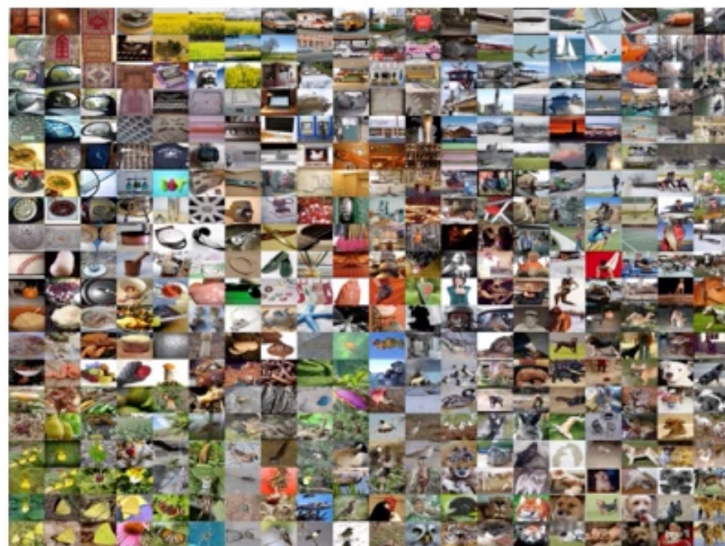

- Nearest Neighbor Upscaling
- Bilinear Interpolation Upscaling

Data Processing Inequality

"Processing data cannot add information content"

Neural Network

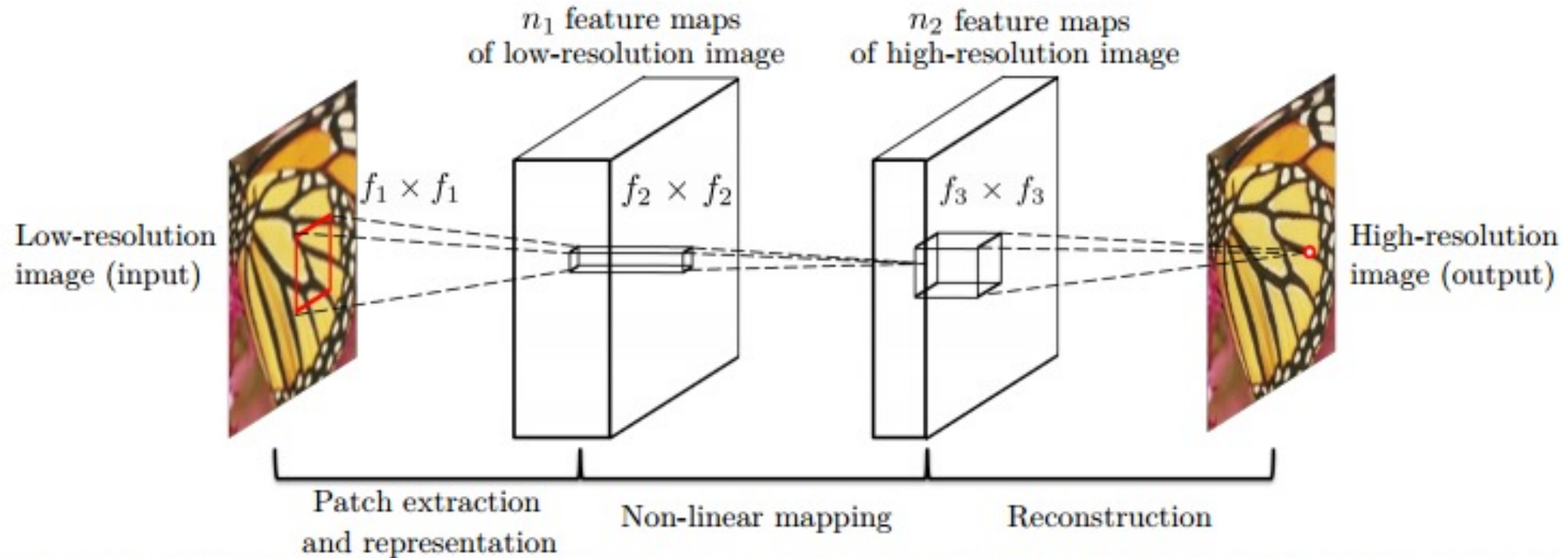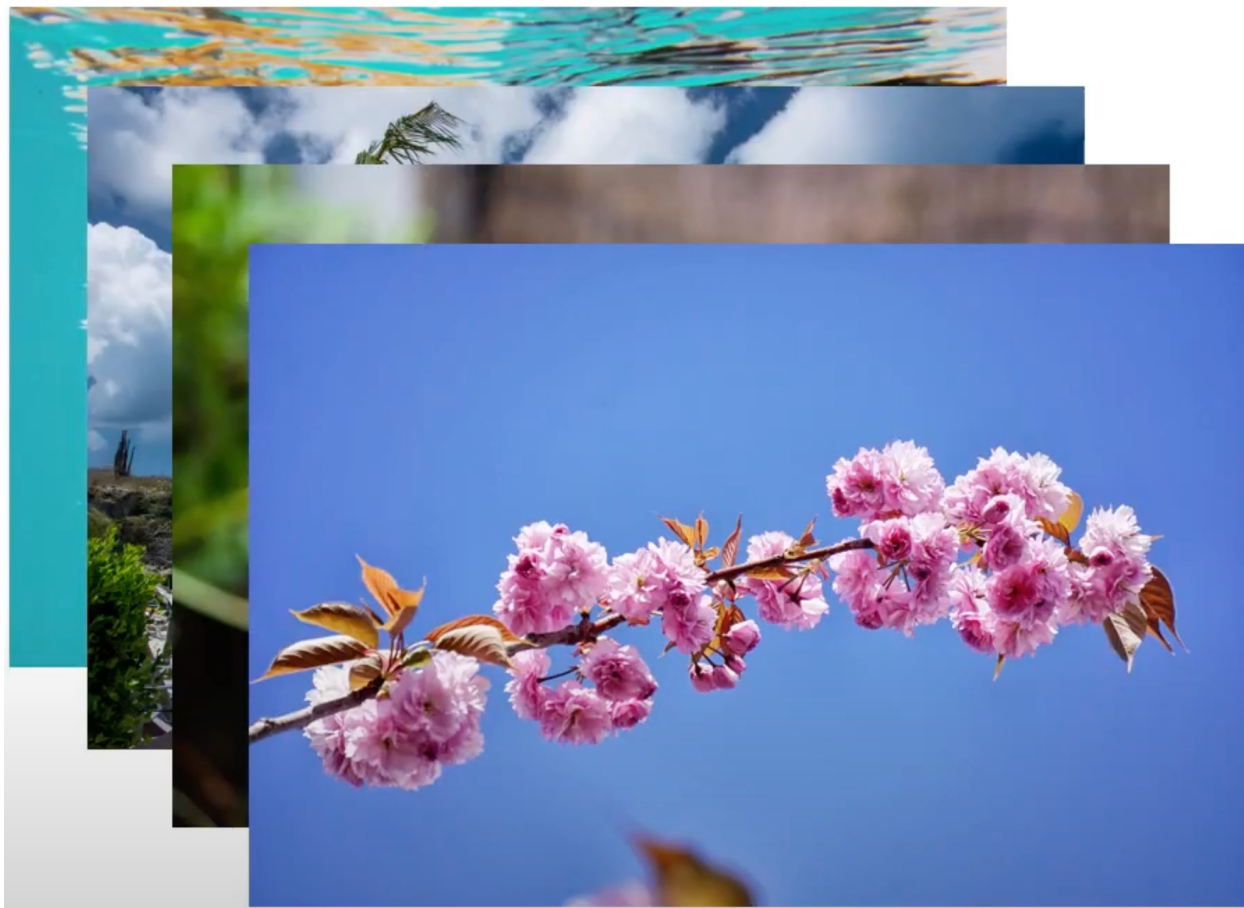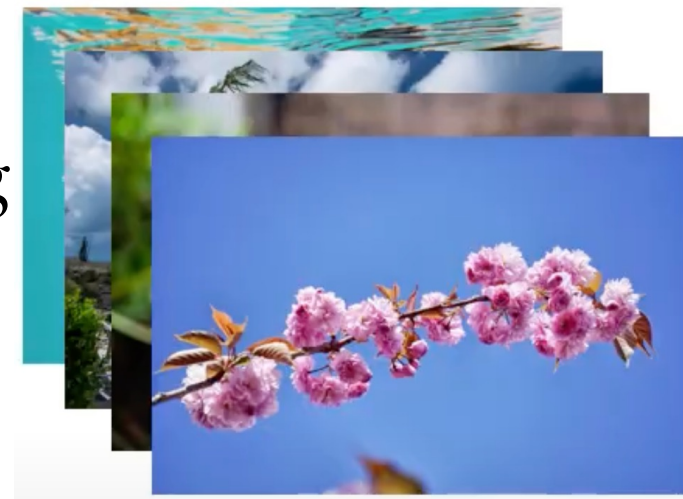# SRCNN(super-resolution convolutional neural network)

Fig. 2. Given a low-resolution image $\mathbf{Y}$, the first convolutional layer of the SRCNN extracts a set of feature maps. The second layer maps these feature maps nonlinearly to high-resolution patch representations. The last layer combines the predictions within a spatial neighbourhood to produce the final high-resolution image $F(\mathbf{Y})$.
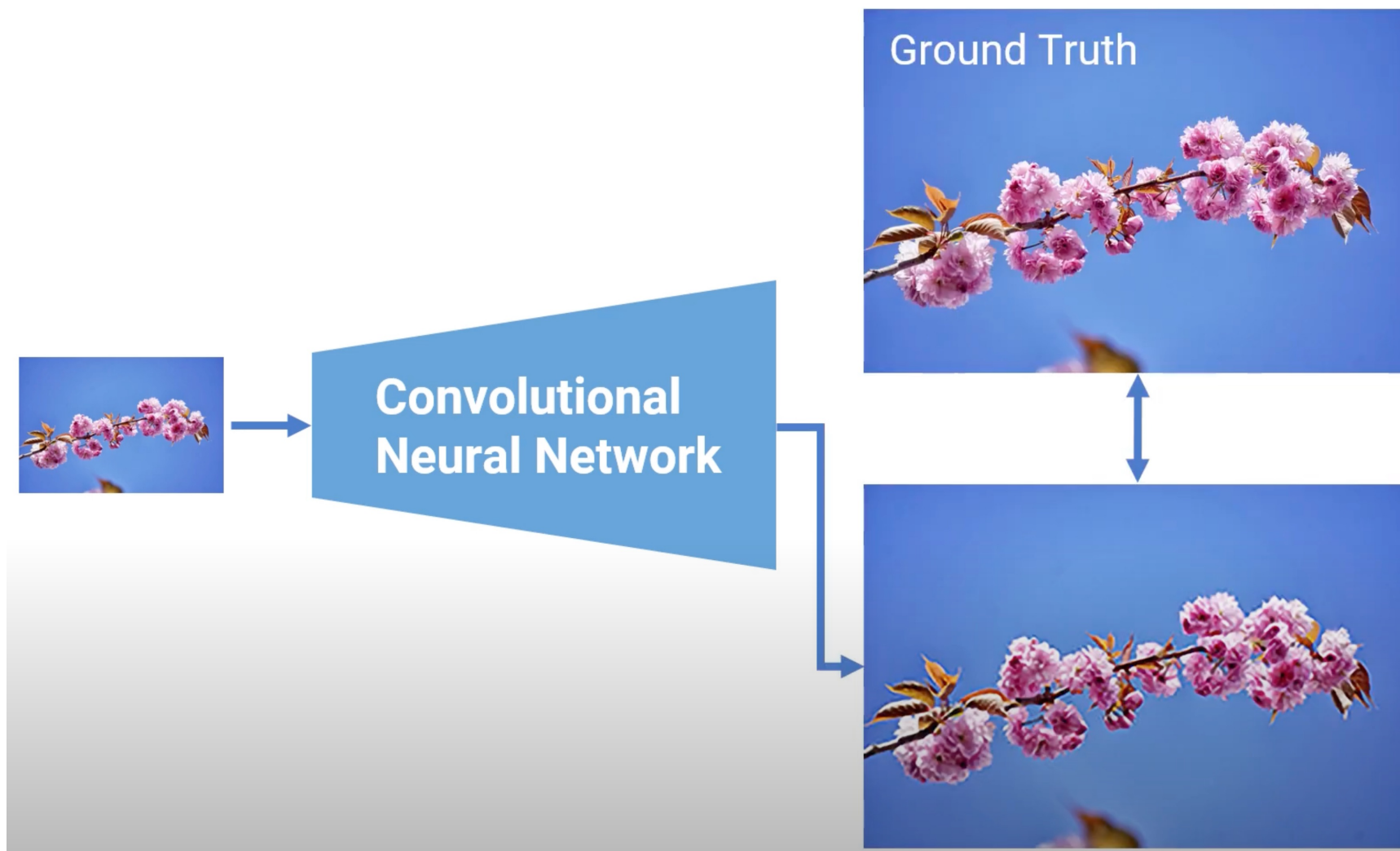
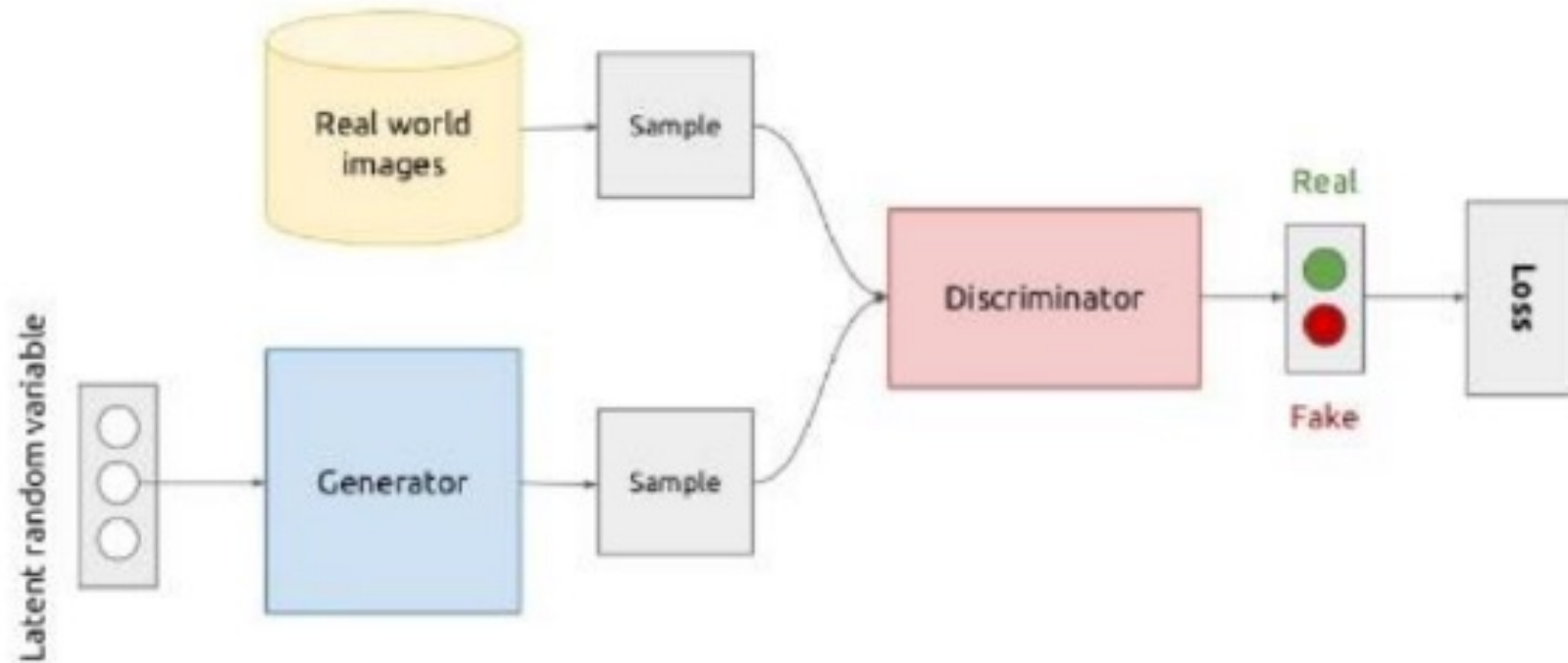# SRCNN(super-resolution convolutional neural network)

downscaling

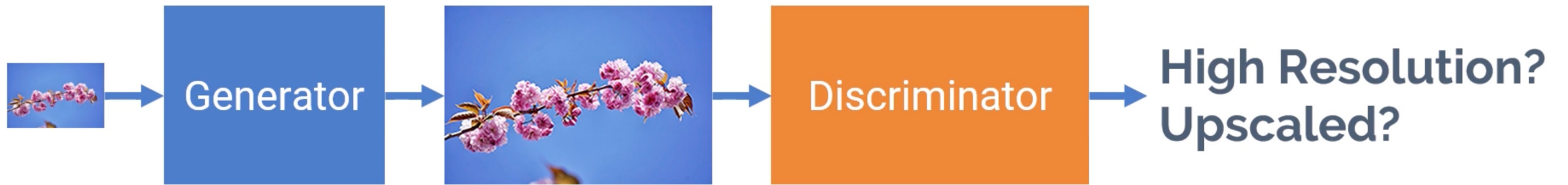# SRCNN(super-resolution convolutional neural network)

Generative Adversarial Networks (GANs)

Super Resolution GAN (SRGAN)

References

- https://www.youtube.com/watch?v=KULkSwLk62I
- https://hoya012.github.io/blog/SIngle-Image-Super-Resolution-Overview/
- https://www.analyticsvidhya.com/blog/2021/05/deep-learning-for-image-super-resolution/
- https://www.youtube.com/watch?v=VxRCku4Bkgg&t=3s
- https://jaejunyoo.blogspot.com/2019/05/deep-learning-for-SISR-survey-1.html
- https://deepsense.ai/using-deep-learning-for-single-image-super-resolution/

Thank you